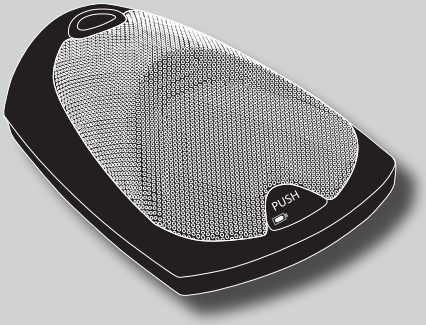
SHURE®

Model MX690

Wireless Boundary Microphone

The Shure MX690 microphone offers cable-free installation for corporate boardrooms or other applications requiring flexible configurations. The MX690 operates within the 518–865 MHz bands and is compatible with Shure SLX wireless systems.



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27EN3240 (Rev. 3)

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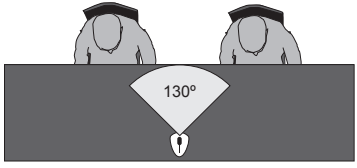
Features

- Sleek, low profile design
- Frequency agile, microprocessor controlled transmitter
- IR link to SLX receiver for automatic frequency synchronization
- Programmable frequency Group/Channel display
- Programmable mute function
- Operates on two AA batteries
- Compatible with all Shure SLX Wireless systems
- Commshield™ technology for protection from RF interference

Place the MX690 within 1.5 m (5 ft.) of a talker. Aim the microphone toward the talkers and away from loudspeakers and noise sources. Use one microphone for every two talkers. Pickup angle with a cardioid cartridge is 130° at –3 dB.

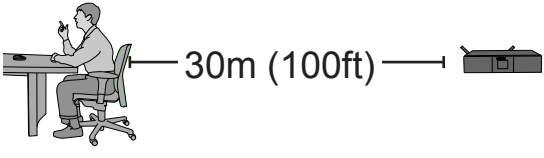
Note: *To minimize RF interference, maintain a distance of at least 0.3 m (1 ft.) between transmitters. In case of interference, increase the distance between transmitters or change channels.*



Receiver

Make sure the receiver is within sight of the transmitter. Do not place receiver behind a metal barrier or any reflective surface.

Refer to the SLX Wireless System User Guide for more information, or visit www.shure.com.

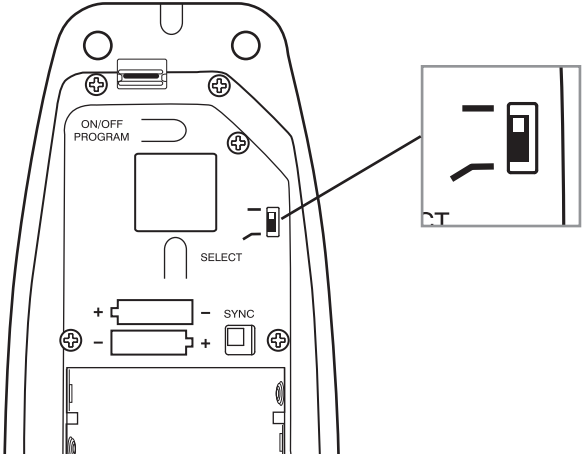


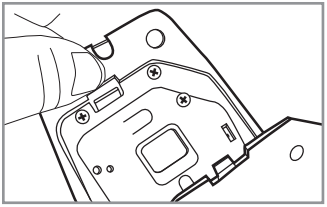
Low-Cut Filter

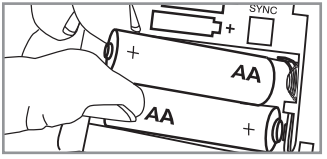
The low-cut filter attenuates frequencies below 150 Hz by 6 dB per octave.

Filter disabled (as supplied)

Low-cut filter



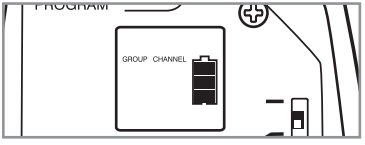




Installation

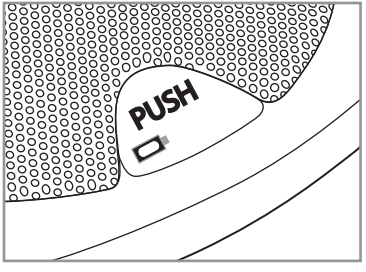
1. Open the battery compartment as shown.
2. Insert two1.5V “AA” batteries. Make sure the +/– terminals are properly oriented.

Note: *Alkaline batteries last up to 8 hours. Rechargeable, carbon-zinc and zinc-chloride batteries provide less operating time.*



Power Meter

The battery meter on the LCD shows remaining battery life.



Low Power Indicator

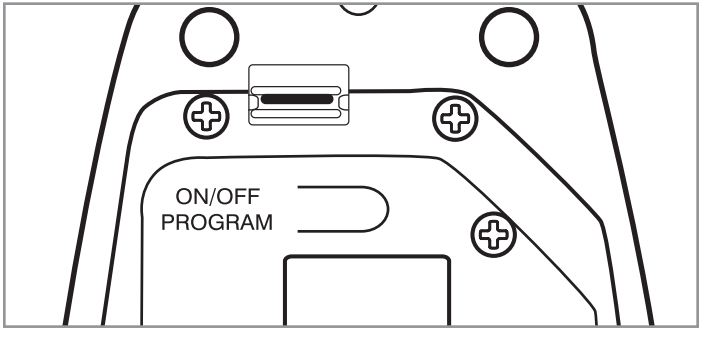
Steady Red: Power low. Replace batteries immediately

Pulsing Red: Batteries dead. Transmitter cannot be turned on until batteries are replaced.

Power On/Off

1. Press and hold the **ON/OFF PROGRAM** button for approximately 2 seconds. The LCD illuminates.
2. To turn the transmitter off, press and hold the **ON/OFF PROGRAM** button again.

Note: *Use the button on the bottom of the transmitter to power it on without opening the battery compartment.*



Mute Button

The mute button can be configured for toggle or momentary operation.

Toggle (as supplied)
The **PUSH** button toggles the microphone between active and muted states.

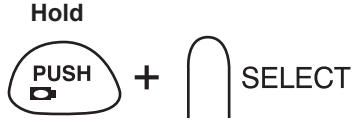
NOTE: *The microphone always powers up in the active state.*

Momentary
There are two types of momentary operation:

Push-to-Mute: The microphone is muted only while the button is pressed and held.

Push-to-Talk: The microphone is active only while the button is pressed and held.

To change between toggle and momentary:
Hold the **PUSH** button and press the **SELECT** button. (Test the microphone to confirm the change.)



To change between push-to-talk and push-to-mute:
1. Set the button for momentary operation.
2. Hold the **SELECT** button and press the **PUSH** button.

Mute Indicator

The bi-color LED on the top of the microphone indicates whether the microphone is active or muted.

The LED can also be set to flash when muted.

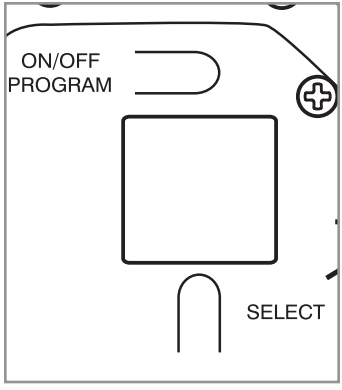
Display Mode	Status Indicator
Steady (as supplied)	Active = Green
	Muted = Red
Flashing	Active = Green
	Muted = Flashing Green

To toggle between off and flashing, press **PUSH** and **ON/OFF PROGRAM** simultaneously.

Locking Settings

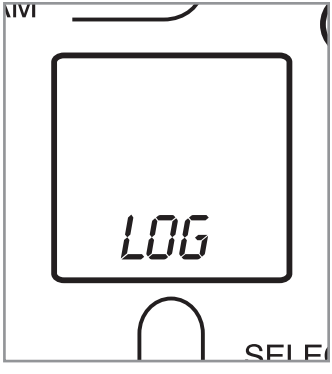
Press **ON/OFF PROGRAM** and **SELECT** simultaneously to lock or unlock transmitter settings. When locked, the current settings cannot be manually changed.

Note: *Locking the transmitter settings does not disable IR frequency synchronization or the High Pass/Low Cut filter.*



LOGIC MODE

To use with a logic enabled receiver, you must perform an automatic sync. The LCD flashes “log” during sync. Once in logic mode, the LCD flashes “log” when powered up.



Automatic Frequency Synchronization

1. Power off all transmitters.
2. Power on all receivers.
3. Begin with the first transmitter. Open the battery cover and power it on.
4. Aim the IR sensor at the first receiver IR port. The transmitter should be no more than 15 cm (6 in.) from the receiver. Press and hold the receiver **SYNC** button to send group and channel data to the transmitter. The red LED on the transmitter will stop flashing when programming is complete.
5. Power off the first transmitter and repeat the synchronization with each additional transmitter and receiver pair.

Manual Frequency Synchronization

1. Press and hold the transmitter **SELECT** button until the desired group number appears.
2. Press **SELECT** again and release it when the desired channel number appears.

Tips for Optimum Performance

- Maintain a direct line of sight between the transmitter and receiver antennas.
- Avoid placing the transmitter on metal surfaces.
- Avoid placing laptop computers or other obstructions in front of the microphone during use.
- Only use with a Shure SLX4 wireless receiver.

Troubleshooting

If you encounter difficulty with the SLX Wireless System:

- Make sure both the transmitter and the receiver are turned on.
- Replace the battery if the battery LED is red.
- Make sure the Group/Channel settings for each transmitter-receiver pair are identical.
- Make sure there is an unobstructed line of sight between the transmitter and receiver.
- If necessary, reposition the receiver or decrease the distance between transmitter and receiver.
- Remove local sources of RF interference, such as computers or lighting equipment.
- Remove metal objects within 0.3 m (1 ft.) of the transmitter

Note: *Refer to the SLX Wireless System User Guide for complete troubleshooting procedures.*

Frequency Selection

Shure offers wireless systems in a selection of bands that conform to the different government regulations of specific nations or geographic regions. These regulations help limit radio frequency (RF) interference among different wireless devices and prevent interference with local public communications channels, such as television and emergency broadcasts.

The system's band and frequency range are identified on the receiver and transmitter. For example, "H4 518-578 MHz."

For information on bands available in your area, consult your local dealer or phone Shure. More information is also available at Shure's website (www.shure.com).

Licensing

Licensing of Shure wireless microphone equipment is the user's responsibility, and licensability depends on the user's classification and application, and on the selected frequency. Shure strongly urges the user to contact the appropriate telecommunications authority concerning proper licensing, and before choosing and ordering frequencies.

Changes or modifications not expressly approved by Shure Incorporated could void your authority to operate this equipment.

Band	Range	Output
H5	518–542 MHz	10 mW
J3	572–596 MHz	28 mW
L4	638–662 MHz	10 mW
P4	702–726 MHz	10 mW
R13	794–806 MHz	10 mW
R5	800–820 MHz	10 mW
S6	838–865 MHz	10 mW
JB	806–810 MHz	10 mW
Q4	740–752 MHz	10 mW
G4	470–494 MHz	10 mW
G5	494–518 MHz	10 mW

Note: *This radio apparatus may be capable of operating on some frequencies not authorized in your region. Please contact your national authority to obtain information on authorized frequencies for wireless microphone products in your region.*

Master List Frequencies

The Master List is an index of all frequencies in a band, including those not assigned to a Group or Channel. The Master List can only be accessed through the receiver, so the transmitter must be synchronized via the IR port. When a Master List frequency is in use, “MASTER LIST” appears on the display. Refer to the SLX Wireless System User Guide for more information.

Note: *Wireless devices such as cellular phones and two-way radios may interfere with wireless microphones. Keep these and other potential sources of interference away from the transmitters and receivers.*

Operating Range
30 m (100 ft.)
Note: *Actual range depends on RF signal absorption, reflection, and interference*

Frequency Stability
±10 ppm

Maximum Frequency Deviation
45 kHz

Oscillator Type
Phase-locked loop (PLL) controlled synthesizer

Power Requirements
3V (2 AA alkaline or rechargeable batteries)

Battery Life
≥8 hours (alkaline)

Power Consumption
130 mA, ±15 mA

Operating Temperature Range
-18–57 °C (0–135 °F)
Note: Battery may limit this range

Dimensions
43 mmH x 87 mmW x 148 mmD (1 11/16 x 3 3/8 x 5 13/16 in.)

Weight
Net: 318 g (11.2 oz)
Packaged: 516 g (18.2 oz)

Microphone Specifications

Type
Condenser (electret bias)

Frequency Response
50–17000 Hz

Polar Pattern (at 1 kHz)
Cardioid

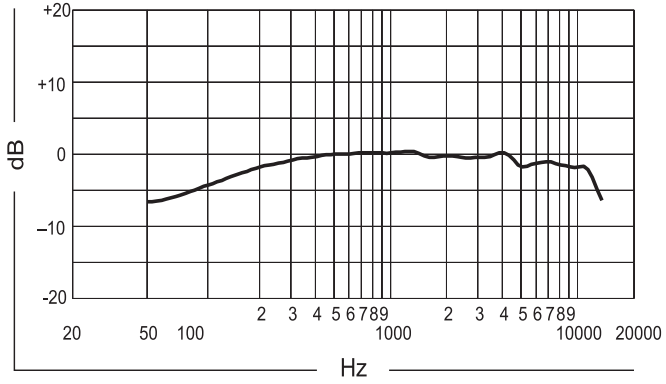
Sensitivity (at 1 kHz , open circuit voltage)
–33 dBV/Pa (22 mV)
1 Pascal=94 dB SPL

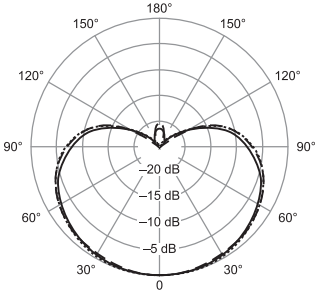
Dynamic Range (1 kΩ load at 1 kHz)
96 dB

Common Mode Rejection (10 Hz to 100 kHz)
45 dB minimum

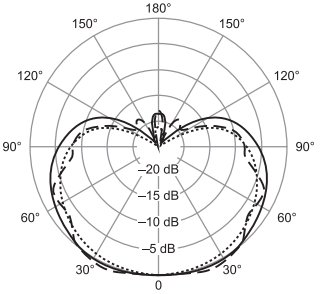
Preamplifier Output Clipping Level (1% THD)
–6 dBV (0.5 V)

Polarity
Positive sound pressure on diaphragm produces positive voltage on pin 2 relative to pin 3 of output XLR connector or tip of 1/4” phone plug.





250 Hz
500 Hz
1000 Hz



2500 Hz
6400 Hz
10000 Hz

Certification

Certified to FCC Part 74 (FCC ID: DD4MX690).

Certified by IC in Canada under RSS-123 and RSS-102 (IC: 616A-MX690).

Meets essential requirements of the European R&TTE Directive 99/5/EC (ETSI EN 300-422 Parts 1 & 2, EN 301 489 Parts 1 & 9) and eligible to carry the CE marking.

Changes or modifications not expressly approved by Shure Incorporated could void your authority to operate this equipment.

CE 0682 ⓘ

EU DECLARATION OF CONFORMITY

We,
of

Shure Incorporated
5800 Touhy Avenue
Niles, Illinois, 60714-4608 U.S.A.
Phone: (847) 600-2000
Web: www.Shure.com

Declare under our sole responsibility that the following product

Model: MX690 Description: Wireless Microphone Transmitter

conforms to the essential requirements and other relevant previsions of the R&TTE Directive (1999/5/EC).

The product complies with the following product family, harmonized or national standards:

EN 301 489-1 V1.4.1 (2002-08)
EN 301 489-9 V1.2.1 (2002-08)
EN 300 422-1 V1.2.2 (2000-08)
EN 300 422-2 V1.1.1 (2000-08)

The technical documentation is kept at:

Shure Incorporated, Corporate Quality Engineering Division
SHURE Europe GmbH, EMEA Approval

Manufacturer: Shure Incorporated

Signed: _____ Date: 20 December 2006
Name and Title: Craig Kozokar, EMC Project Engineer, Corporate Quality Engineering Division

European Representative: SHURE Europe GmbH

Signed: _____ Date: 20 December 2006
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